

I CLAIM

1. A method of generating test bitstreams to test a bitstream decoder arranged to  
decode bitstreams generated in accordance with a predefined syntax, comprising the  
5 steps of:
  - (a) generating test code from the syntax, the test code being arranged when  
executed to generate a test bitstream dependent on values assigned to a plurality of  
variables, each variable having a number of interesting values;
  - (b) executing the test code, including the step of, for each of said variables.  
10 assigning that variable one of its interesting values, thereby generating a test bitstream  
dependent on the interesting value assigned to each variable.
2. A method as claimed in Claim 1, wherein said step(b) is repeated until each  
variable has been assigned each of its interesting values, whereby a set of test  
15 bitstreams are generated.
3. A method as claimed in Claim 2, wherein each variable has a first set of  
interesting values for use in generating supported bitstreams supported by the  
bitstream decoder, and a second set of interesting values for use in generating  
20 unsupported bitstreams that are valid having regard to the syntax but not supported by  
the bitstream decoder, and the test code is executed to generate a set of supported test  
bitstreams and a set of unsupported test bitstreams.
4. A method as claimed in Claim 1, wherein at least one of said plurality of  
25 variables is defined by the syntax.
5. A method as claimed in Claim 4, wherein the bitstream decoder supports said  
at least one variable having any value from a set of non-overlapping continuous  
ranges.

6. A method as claimed in Claim 5, wherein, when generating supported bitstreams supported by the bitstream decoder, the interesting values of said at least one variable are the boundary cases of each range in the set.
- 5 7. A method as claimed in Claim 5, wherein, when generating unsupported bitstreams that are valid having regard to the syntax but not supported by the bitstream decoder, the interesting values of said at least one variable are those values adjacent to, but outside of each range in the set.
- 10 8. A method as claimed in Claim 1, wherein at least one of the variables is an internal variable used to control execution of conditional operations within the test code.
9. A method as claimed in Claim 8, wherein each internal variable may take any  
15 value within one or more ranges of values, and the interesting values for the internal variable are the boundary cases for each range.
10. A method as claimed in Claim 1, further comprising the step of generating one or more tables containing the interesting values of each variable.
- 20 11. A test bitstream generator for generating test bitstreams to test a bitstream decoder arranged to decode bitstreams generated in accordance with a predefined syntax, comprising:  
a processor arranged to execute test code generated from the syntax, the test  
25 code being arranged when executed to generate a test bitstream dependent on values assigned to a plurality of variables, each variable having a number of interesting values;  
value determination means, responsive to execution of the test code, to assign to each variable one of said interesting values;  
30 whereby a test bitstream is generated dependent on the interesting value assigned to each variable.

- [illegible]